

Fig. 1

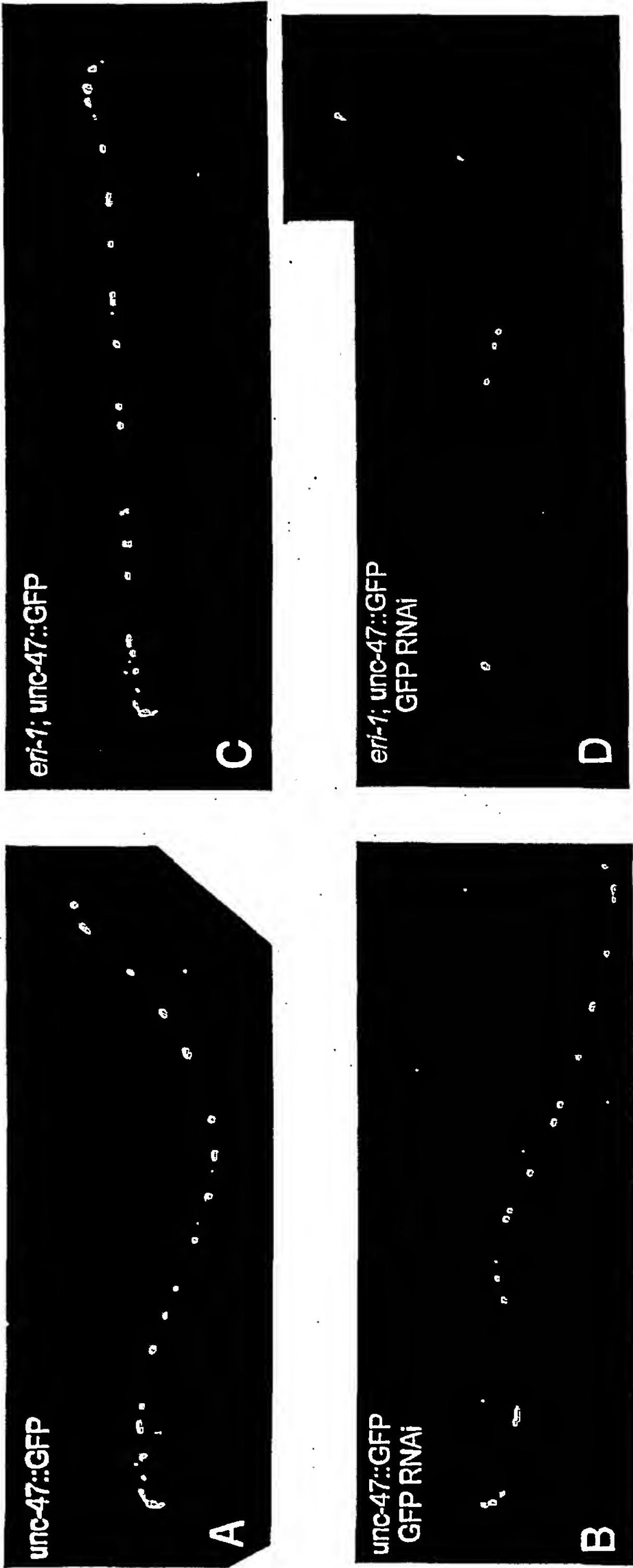


Fig. 2

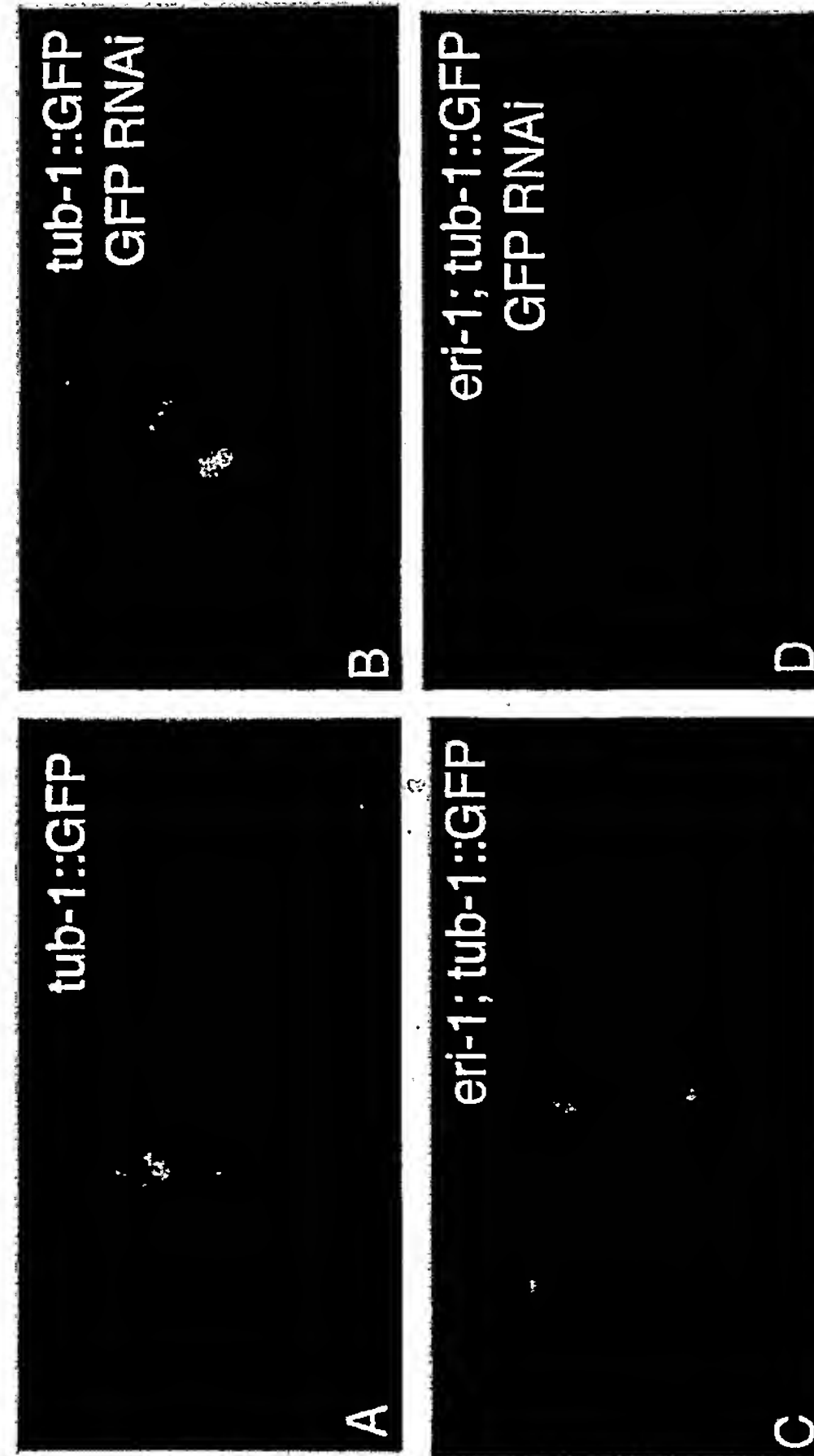


Fig. 3A

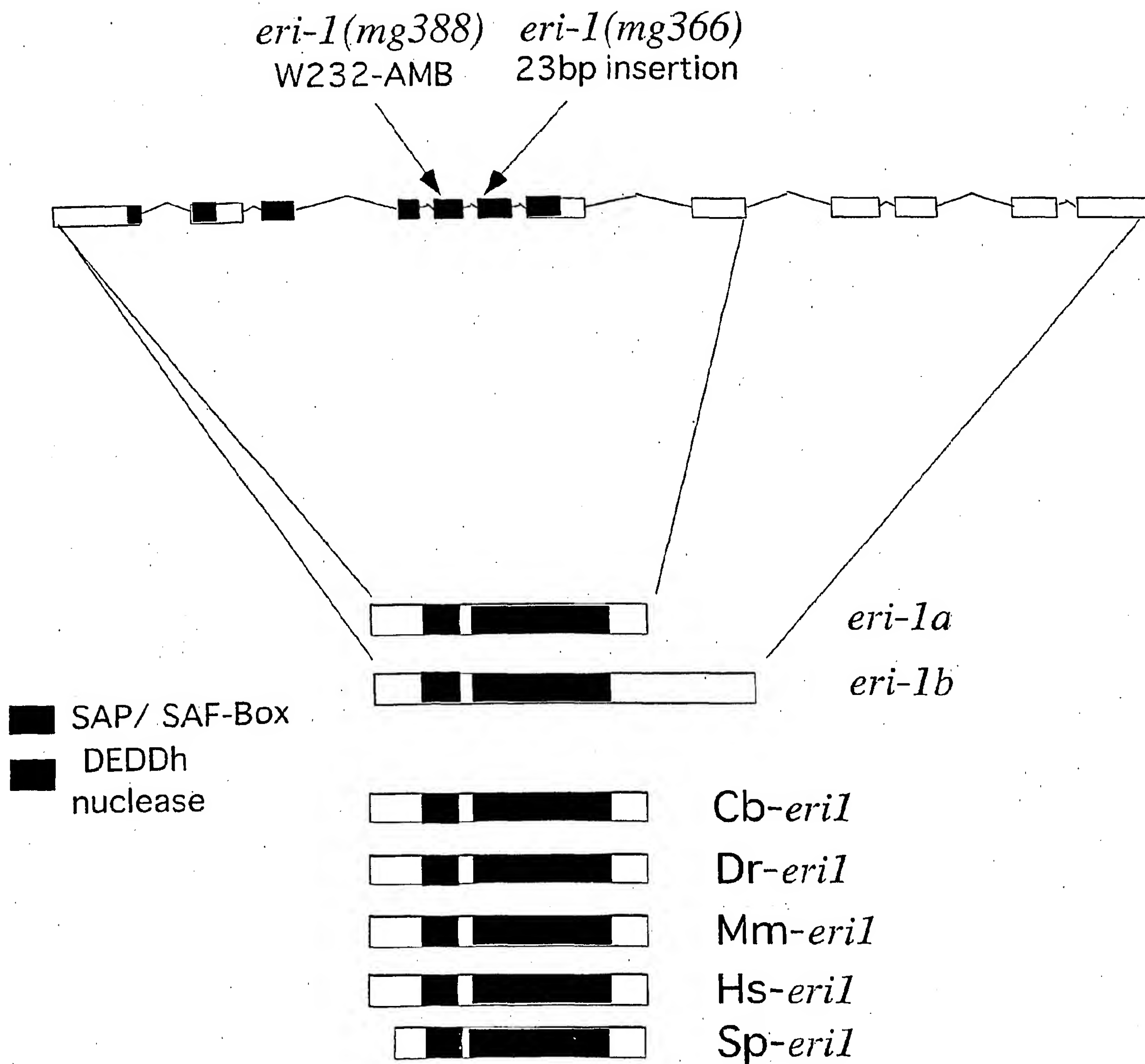


Fig. 3B

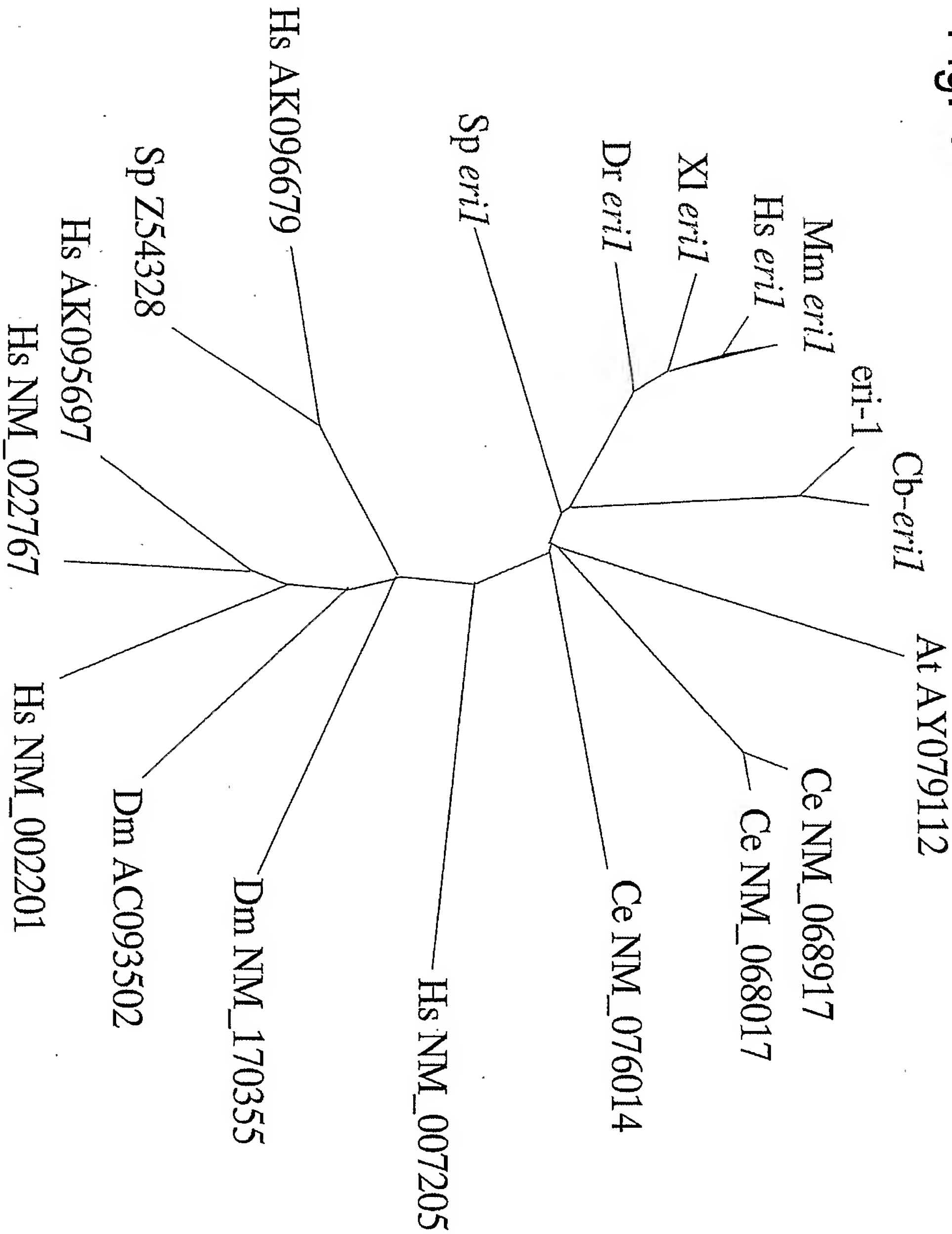


Fig 3c

	I	II	III
eri-1	YLIAI	FVTDGPHDMWKFM	GNGKHSGLD TATN
Cb eri1	NFQAI	FVTDCPHDMWKFEM	GNGKHSGLDARN
Hs eri1 (3 ^{hExo})	YICII	LITDGSWDMSKFL	GRPCGLD SKN
Mm eri1	YICII	ILTDGSWDMSKFL	GRPCGLD SKN
X1 eri1	YICVI	ILTDCSWDMASKFL	GRLSGLD SKN
Dr eri1	YICVV	FLTDCSWDMGKFL	GRPCGLD SRN
Sp eri1	YLLIV	WACDGPMDMASFL	GSEHRCID ARN
DEDDh	AH051864	KCVAI	AAH051864

Fig. 4

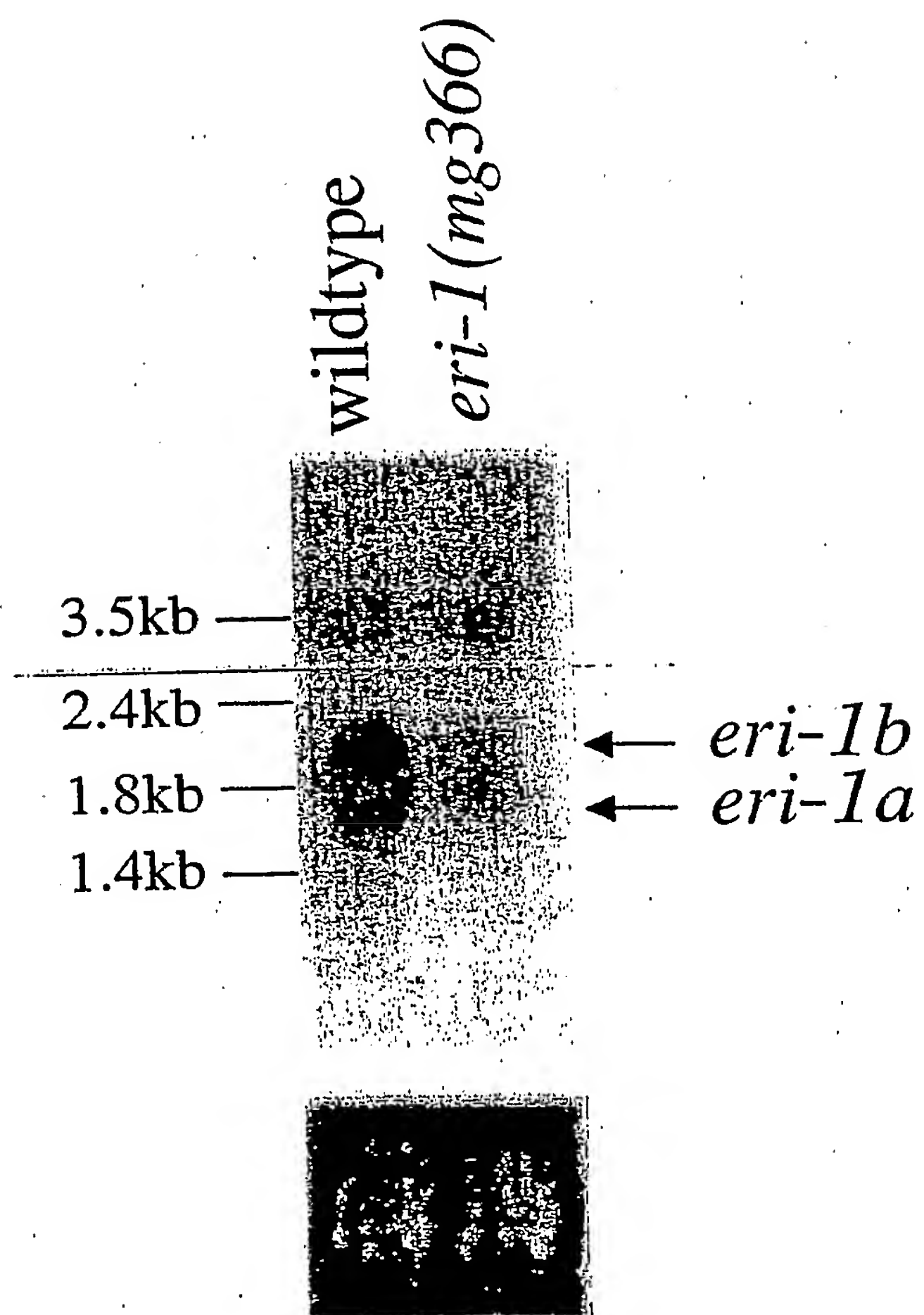
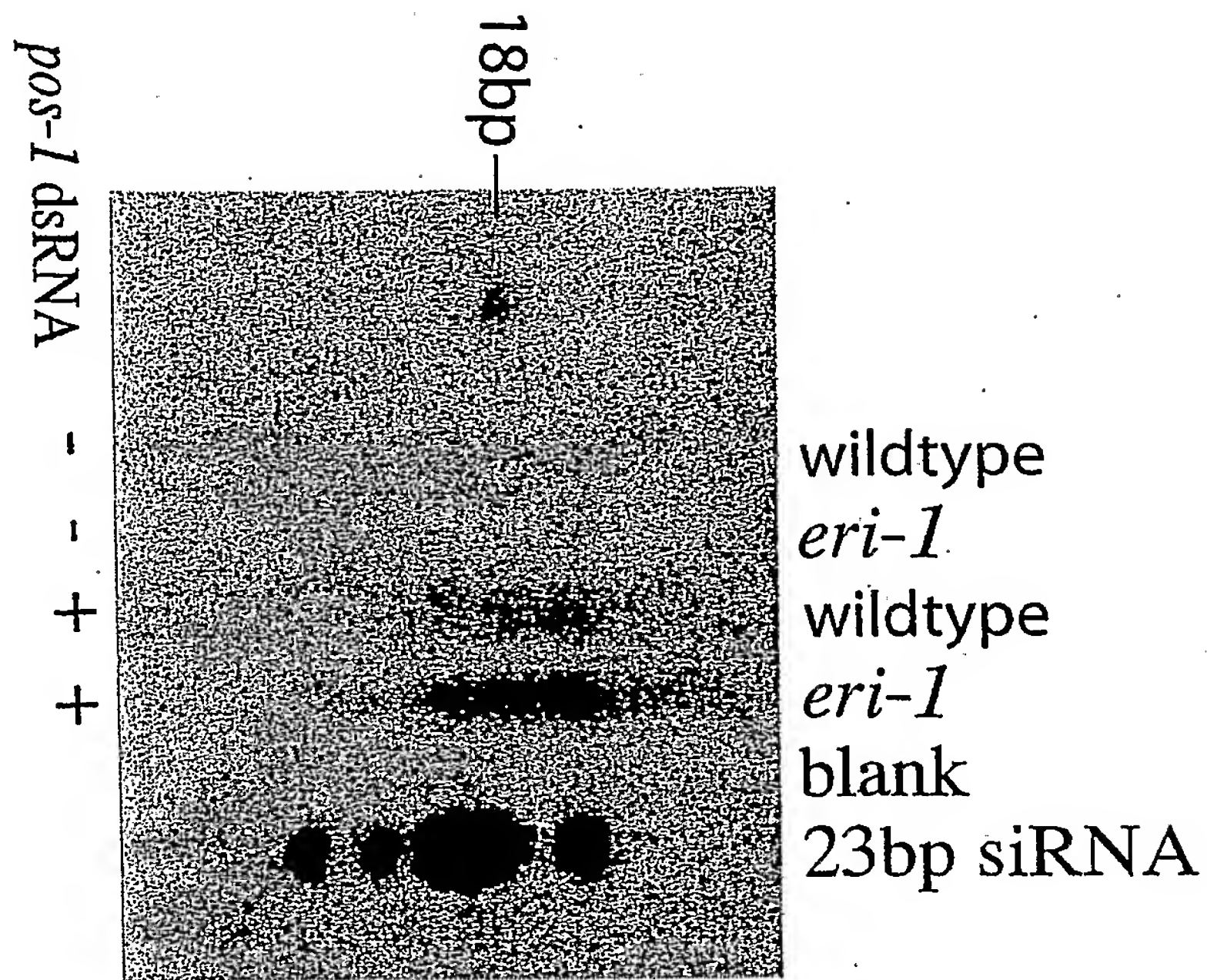


Fig. 5

A



B

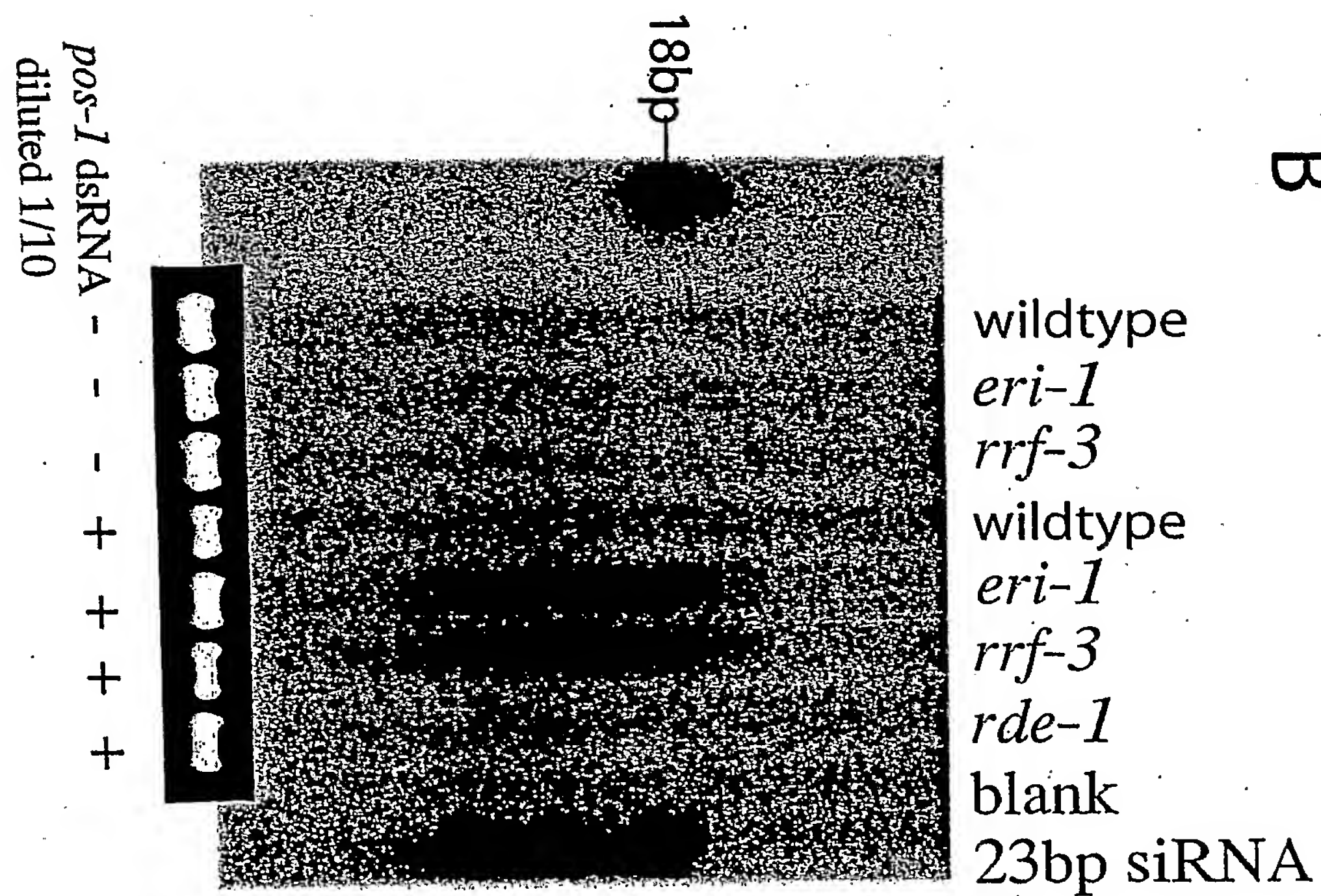


Fig. 6

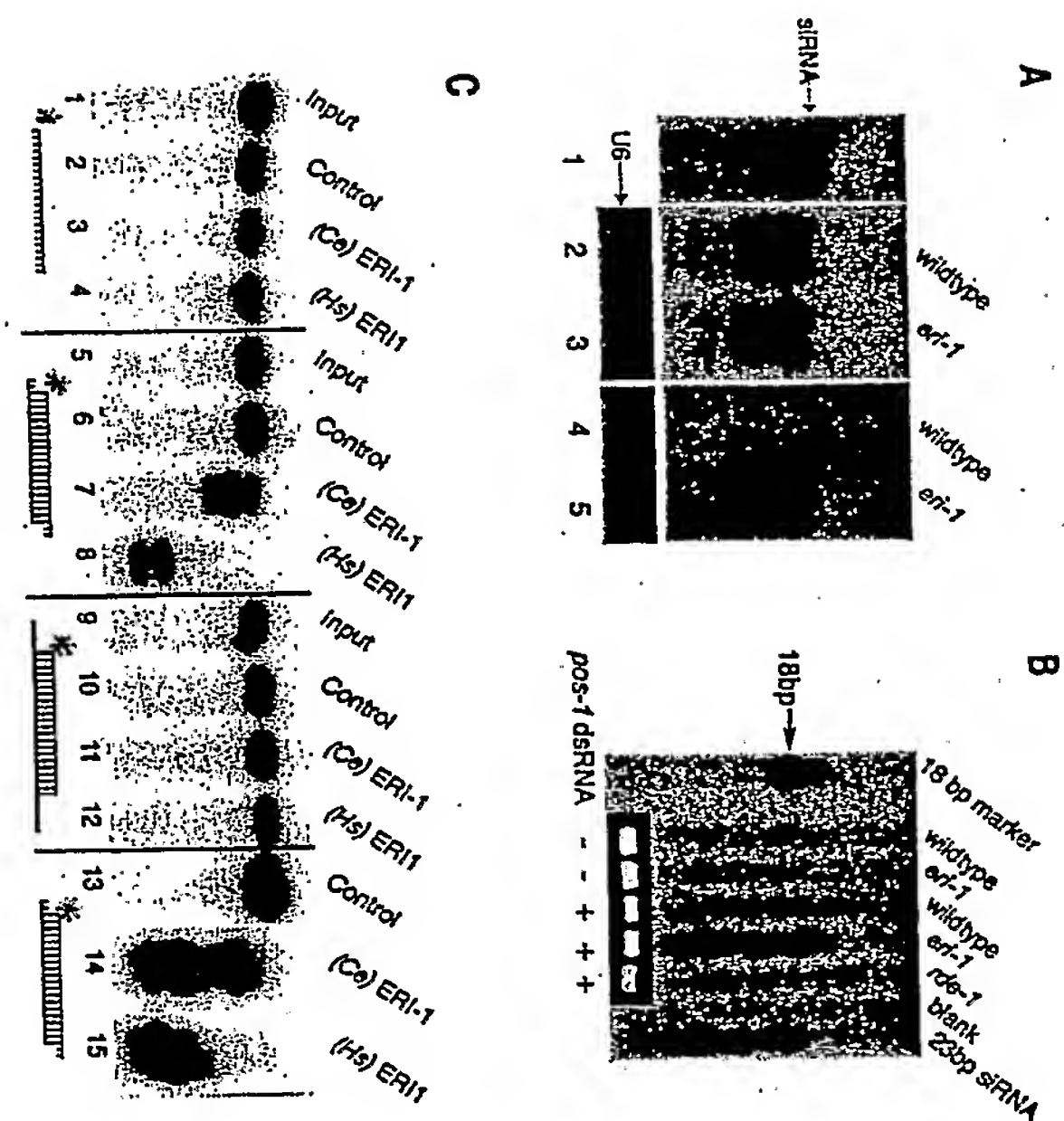


Fig. 7

Wildtype

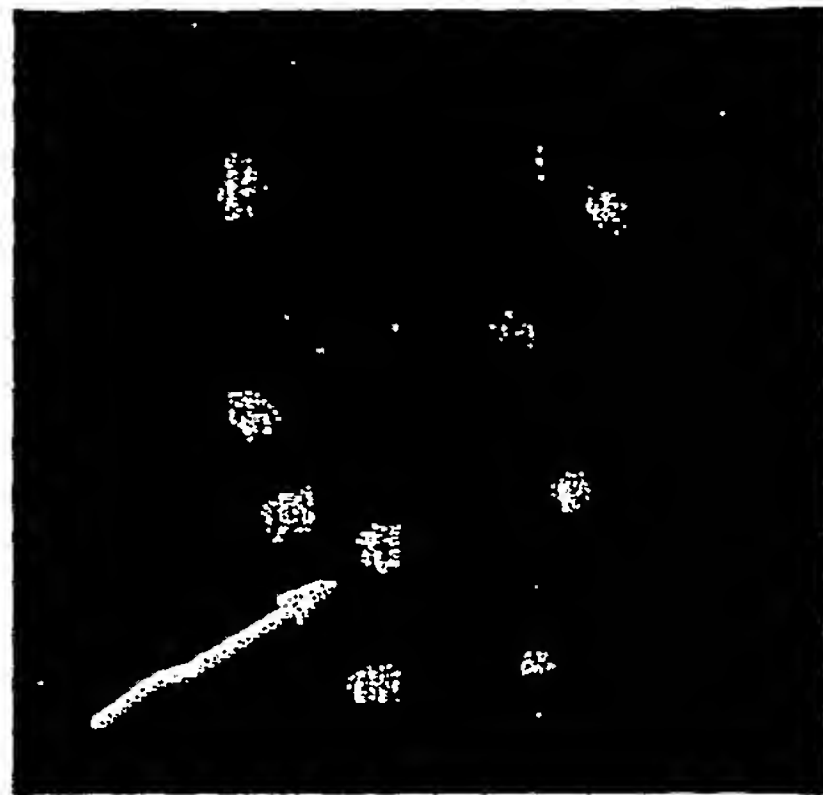
*eri-1(mg366)*

Fig. 8a

Head
→
Neurons

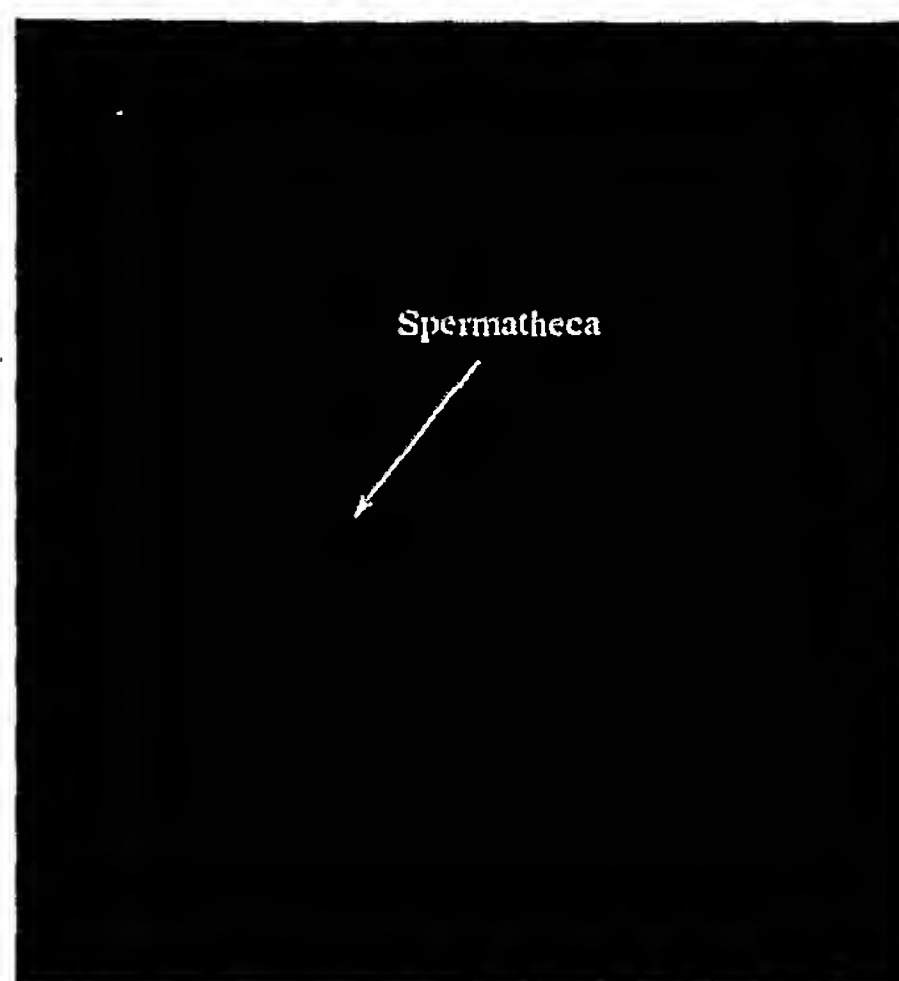
Developing
Gonad

Tail
→
Neurons

eri-1b::GFP
cytoplasmic
localization

Fig. 8

B



C

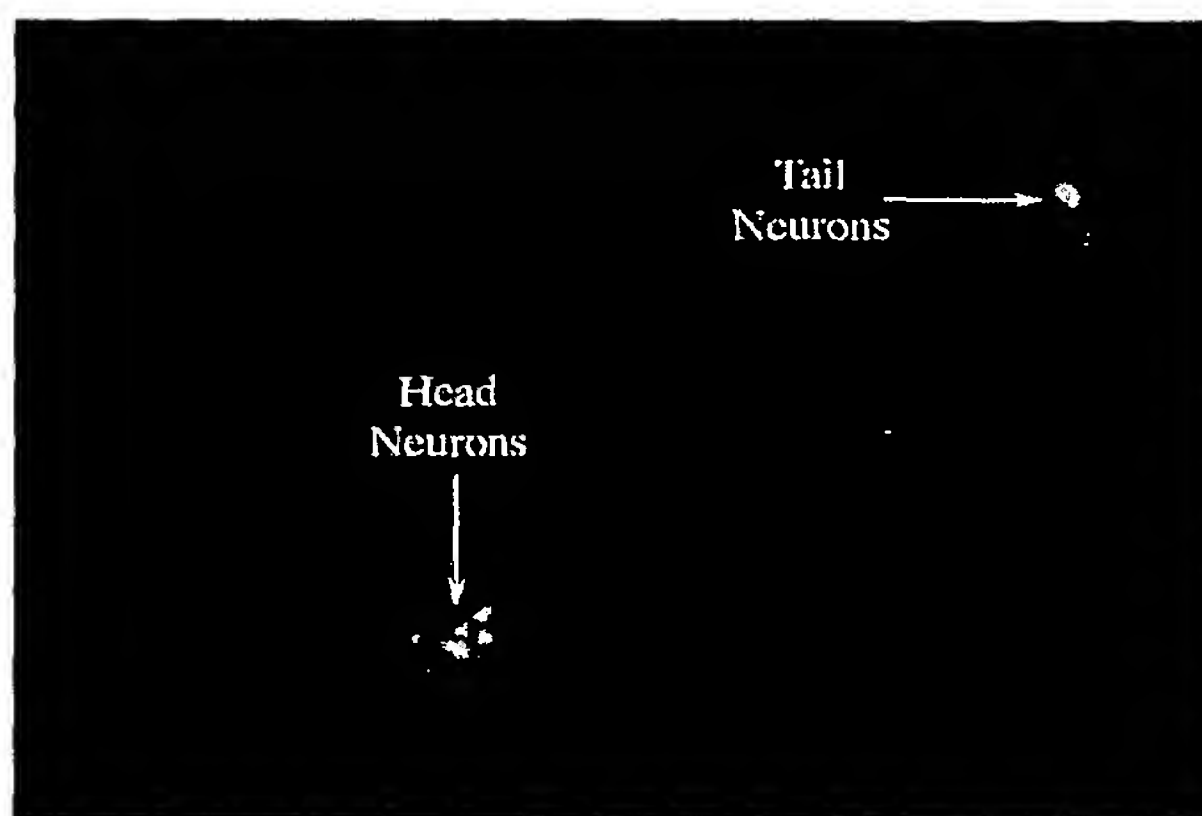


Figure 9A

Gene="T07A9.5b(SEQ ID NO:1)

join (1..335,553..673,728..829,1361..1433,1477..1600,

1666..1801,1850..2047,2614..2781,3122..3231,3288..3396, 3767..3857,3994..4175)

Gene="T07A9.5a

join(1..335,553..673,728..829,1361..1433,1477..1600,1666..1801,1850..2047,2614..2871)

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421 tttgatagtt ttgttaaaaa gaaacagcat tttttgaatc attttgctgt aaatatagtc
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541 ctctaatttc agcggaaaca agaaaactct tcgaaaacgg gttgcacaat attatcgaaa
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721 atttcaggca attgatttct agtgtagctg cgtcgagatt atatacgatt acccacacga
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841 tcatctttga aaatggaata tgtogaatta cgcgtgtcgt gtactccccg cggacaaggga
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2041 gcgagagggt cgaaacagac tacgtcgttt tcacccgatg gggtgactct cccattcggg
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2161 ttcgatatga aattgtttca gtgcattttt cactaatttg gagacctgtt gaattgctct
2221 aaatgttttt ttgcaaagtt caatgttttt cagaacgggt ataagtaggt gaacactctg
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Figure 9A (cont'd)

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3661 ttcgtataat acaaaaccga acttttattt tgttttcaaa tttaataaaa attcgagcaa
3721 aaaaccaa at cgatttggag tttaataat taattttttc gttcaggaaa gaatgcctcc
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3901 cttgaaattc tgtttgatta aaatgtcaat tcaattgctc ccaaagttha aattattgaa
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4081 catcaccact tcatatcgac gatgacgtgg accgcgtggt gaatgcgccg cccaaaaatt
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Figure 9BT07A9.5b Encoded Protein (SEQ ID NO:2)

MSADEPSPEDKYLESLRDLLKISQEFDASNAKQNDPEKTAVE
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ALMKIKVSTGGNKKTLRKRVAQYYRKENALLNRKMEPNADKTARFFDYLIAIDFECTC
VEIIYDYPHEIIELPAVLIDVREMKIISEFRITYVRPVRNPKLSEFCMQFTKIAQETVD
AAPYFREALQRLYTWMRKFNLGQKNSRFAFVTDGPHDMWKFMQFQCLLSNIRMPHMF
SFINIKKTFKEKFNGLIKNGKSGIENMLERLDLSFVGNGHSGLDATNIAAIAIQMM
KLKIELRINQKCSYKENQRSAARKDEERELEDAANVDLTSDISRRDFQLWMRRLPLK
LSSVTRREFINEEYLDSCDDLTDDKNDEAAFQEKMAIREYLENKQTEDFAKIAAER
GIFKIGEIKSYQTARPIIEDDDVDVESEEDYGTETEMLEVVERMPVPSSTLHTEVDL
DAVWERDGGSDSERENLSNAPSLHEFPSSSTSSPHATSEHVTSSSPLHIDDDVDRVLN
APPKNSLASSNRSSF

T07A9.5a (SEQ ID NO:3)

MSADEPSPEDKYLESLRDLLKISQEFDASNAKQNDPEKTAVE
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AAPYFREALQRLYTWMRKFNLGQKNSRFAFVTDGPHDMWKFMQFQCLLSNIRMPHMF
SFINIKKTFKEKFNGLIKNGKSGIENMLERLDLSFVGNGHSGLDATNIAAIAIQMM
KLKIELRINQKCSYKENQRSAARKDEERELEDAANVDLTSDISRRDFQLWMRRLPLK
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Figure 10A

Gene: 3'HEXO (SEQ ID NO:4)

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1141  tccaccacca  caaatgccac  attttagaaa  gtaacaacag  ttttgtgtgt  ggatcattcc
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2101  aaaagacttg  tttttctgaa  aaaaaaaaaa  aaaaaaaaaa  aaaaaaaaaa  aaaaaaaaaa
2161  aaaaaaaaaa  aaaaaaaaaa  aaaaaaaaaa  aaaaaa

```

Figure 10B

Homo sapiens 3' exoribonuclease (SEQ ID NO:5)

MEDPQSKEPAGEAVALALLES PRPEGGEEPPRPSPEETQOCKFD
GQETKGSKFITSSASDFSDPVYKEIAITNGCINRMSKEELRAKLSEFKLETRGVKDVL
KKRLKNYYKKQKLMLKESNFADSYDYICIIDFEATCEEKNPPEFVHEIIEFPVLLN
THTLEIEDTFQQYVRPEINTQLSDFCISLTGITQDQVDRADTFPQVLKKVIDWMKLKE
LGTKYKYSLLTDGSWDMSKFLNIQCQLSRLKYPPFAKKWINIRKSYGNFYKVPRSQTK
LTIMLEKLGMDYDGRPHCGLDSDSKNIARIAVRMLQDGCELRINEKMHAGQLMSVSSSL
PIEGTPPPQMPHFRK

Figure 10C ERI-1 Nuclease Domains

C. elegans ERI-1

YLIAIDFECTCVEIIYDYPHEIIELPAVLIDVREMKIISEFRTYVRPVRNPKLSEFCMQF
 TKIAQETVDAAPYFREALQRLYTWMRKFNLGQKNSRFAFVTDGPHDMWKFMQFQCCLLSNI
 RMPHMFERSFINIKKTFKEKFNGLIKNGKSGIENMLERLDLSFVGKHSGLDDATNIAAI
 AIQMMKLKIE

Human ERI-1

YICIIDFEATCEEKNPPEFVHEIIIEFPVLLNTHLTLEIEDTFQQYVRPEINTQLSDFCIS
 LTGITQDQVDRADTFPQVLKKVIDWMKLKELGTKYKYSLLTDGSDMSKFLNIQCQLSRL
 KYPPFAKKWINIRKSYGNFYKVPRSQTCLTIMLEKLGMDYDGRPHCGLDDSKNIARIAVR
 MLQDGCE

Zea mays ERI-1

YFVVIDFEATCDKVNPPFPQEIIEFPSVLVNSATGKLEECFQTYVRPTYHQFLTDFCKEL
 TGIQQIQVDRGVPLGEALLMHDKWLEDKGIKNTNFAIVTWSNWDRCIMLESECRFKRIRK
 PPYFNRWINLRVPFQEVYGDVRCNLKEAVQLAGLTWEGRAHCGLDDARNTARLLALLMHR
 GFK

Oryza ERI-1

HFVVVDFEATCERGRRIYPQEIIEFPAVLVDAATGRLVSAFRAYVRPRHHPRLTDFCREL
 TGIAQGDVDAGVGLAEALLRHDEWLRAAGVVEGGGRFAVVTWGDADCRTMLEQECRFKGI
 AKPAYFDRWVDLRVHFEEAFGGGGQVRVQLQEAARAAGLEWVGRHLHCGLDDACNTARLLVE
 LLRRGVP

Arabidopsis ERI-1

FLVIDLEGKVEILEFPILIVDAKTMEVVDLFHRFVRPTKMSEQAINKYIEGKYGELGVDR
 VWHDTAIPFKQVVEEFVWLAHDLWDKDTDWGLNDAAFVTCGNWDIKTKIPEQCVVSNI
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 SEGA

ERI-1A exhibits sequence specific nuclease activity

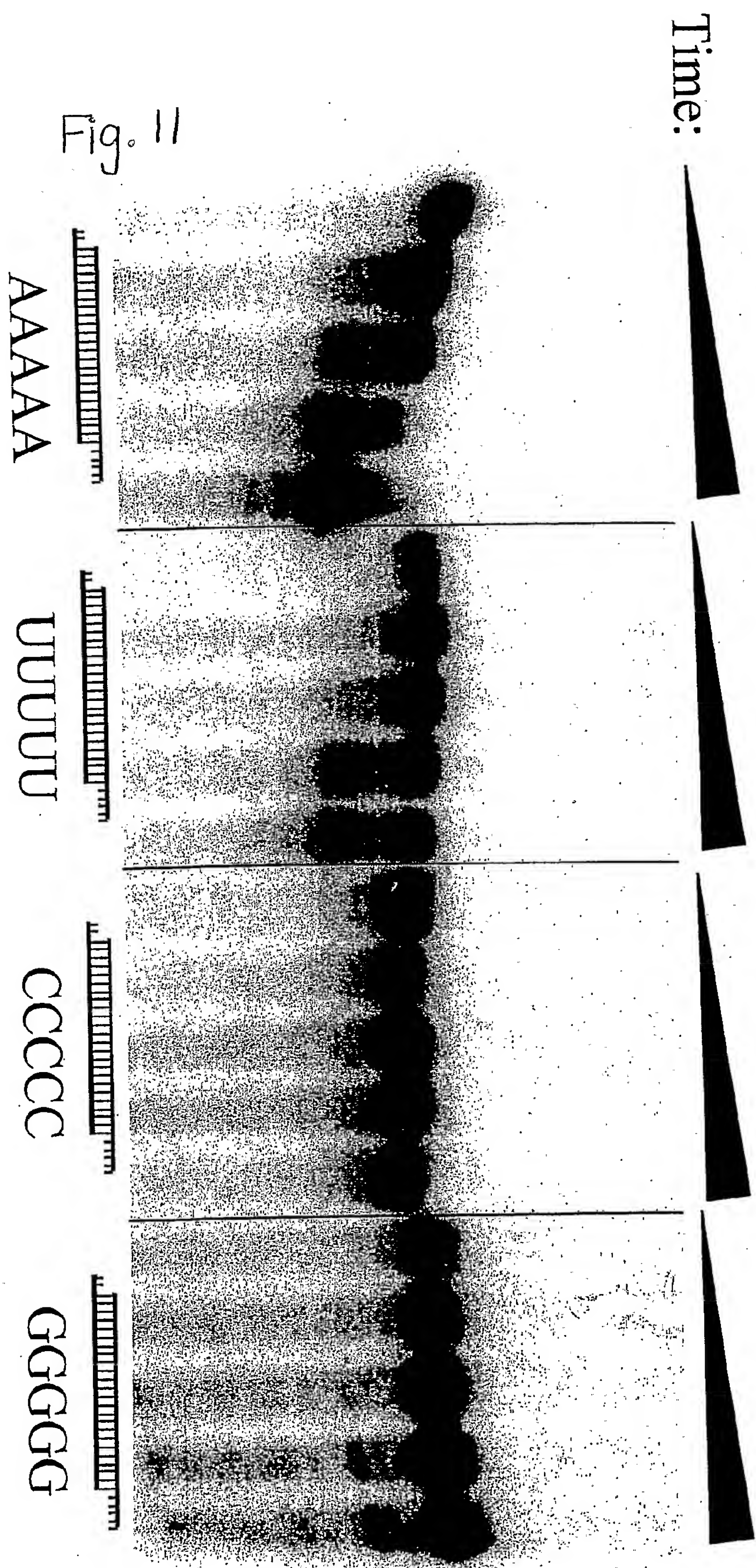
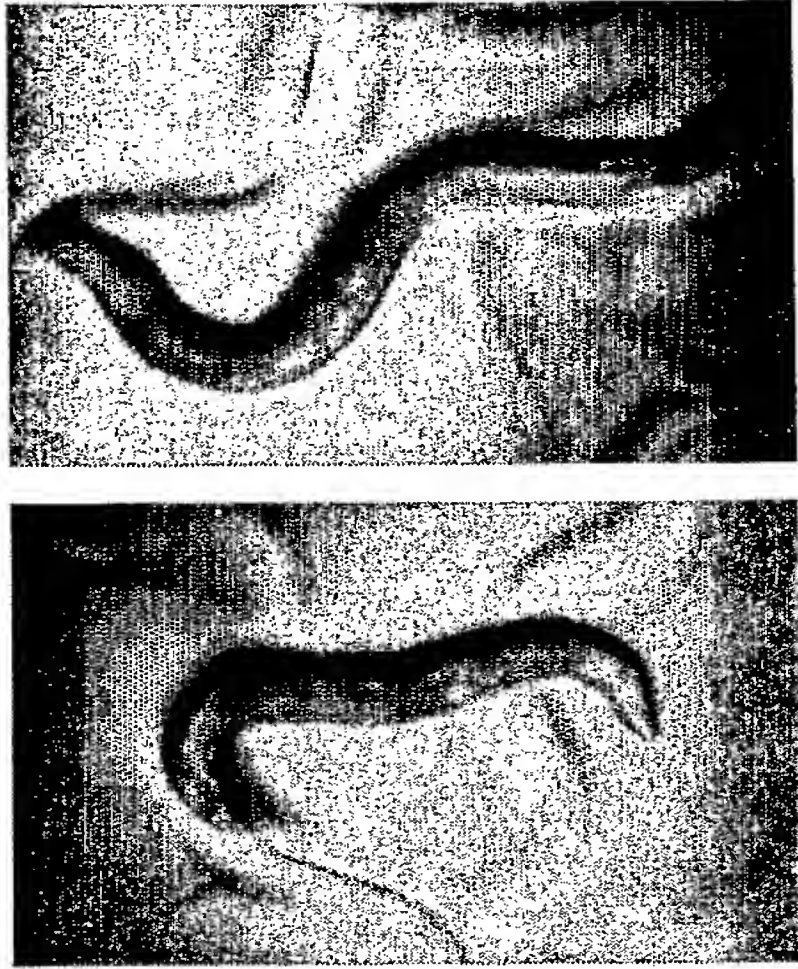


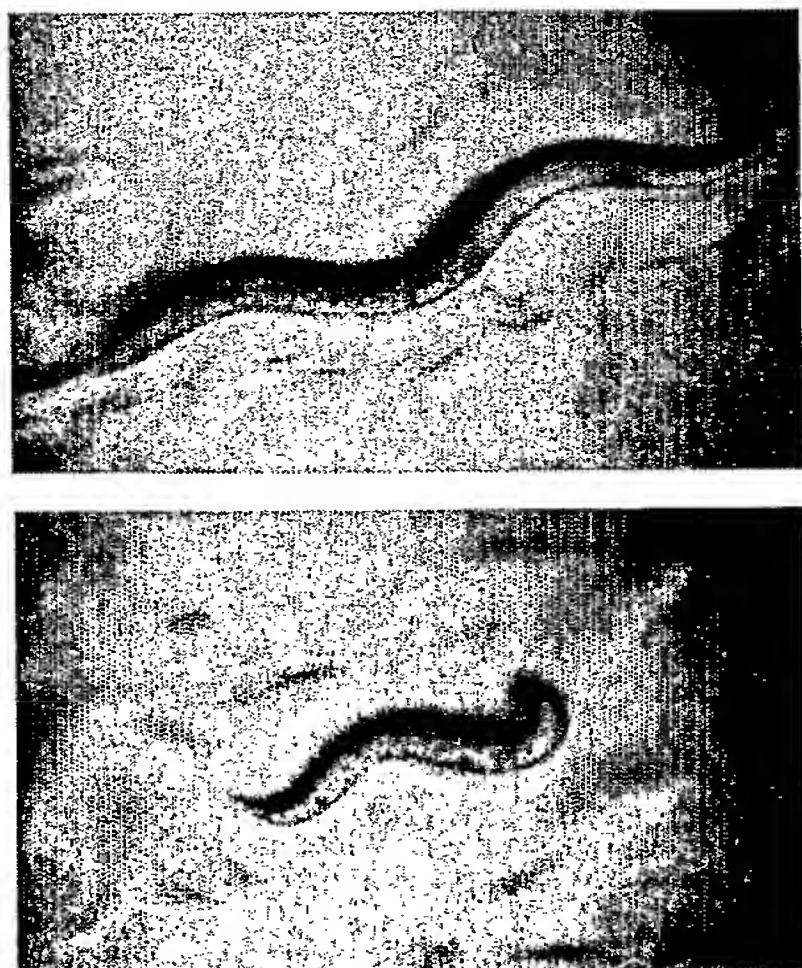
Fig. 12

Wild type

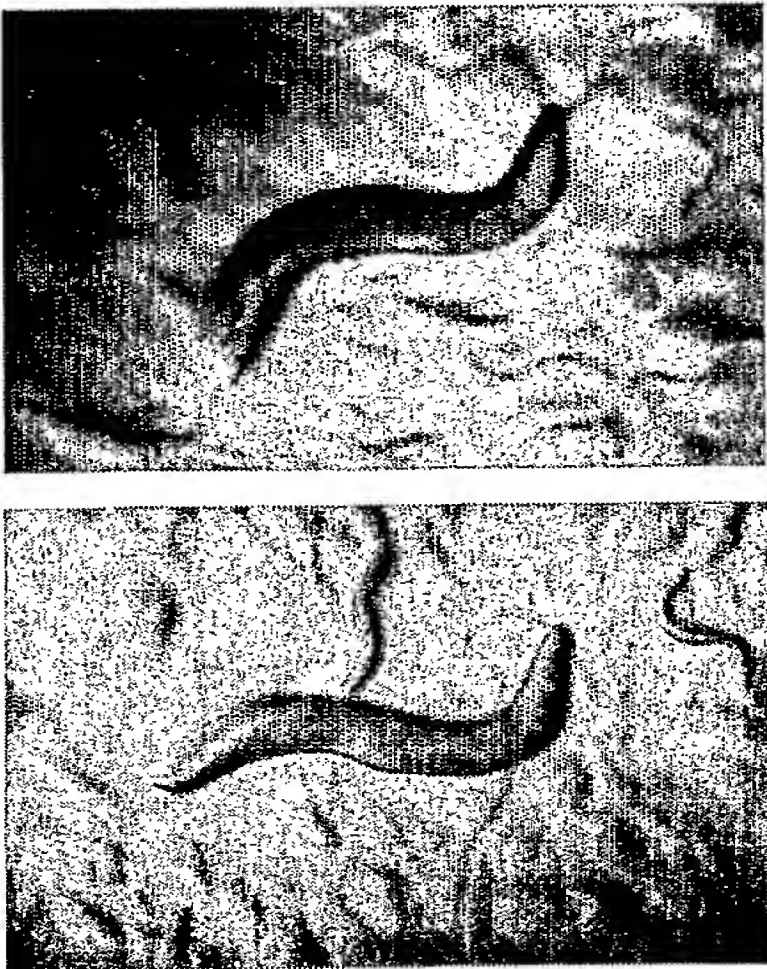
A

control *dpy-13* RNAi*eri-1* (*mg366*)

B

control *dpy-13* RNAi*dpy-13* (*e458*)

C

control *dpy-13* RNAi*eri-1* (*mg366*); *dpy-13* (*e458*)

D

control *dpy-13* RNAi